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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/685,196	10/10/2000	Timothy R. Miller	195273US8	4307

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RESTON, VA 20190

EXAMINER

CHANG, EDITH M

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/685,196

Applicant(s)

MILLER ET AL.

Examiner

Edith M Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>13</u> . | 6) <input type="checkbox"/> Other: _____  |

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## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, filed March 25 2004, with respect to the rejection(s) of claim(s) 1-6, 9-14, and 17 under 35 U.S.C. 103(a) have been fully considered and are persuasive.

Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Struhsaker et al.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "selector" cited in the claim 9, the "calculator" and "comparator" cited in the claim 15, the "subtractor" cited in the claim 22, the "detector" cited in the claim 24 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The

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replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6, 9-14, & 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dress, Jr. et al. (US 6603818) in view of Struhsaker et al. (US 6128331).

Regarding **claims 1, 9 & 17**, except explicitly specify the selector/means to select the arm, Dress, Jr. et al. discloses all subject matter claimed a system and its method comprising: an antenna/means receives incoming pulses of the UWB signal (1400 FIG.14, column 11 lines 40-45), adjacent pulses of the incoming pulses occurring at a predetermined interval (column 5 lines 60-65); a signal generator/means generates local pulses (1490 FIG.14); a correlator/means for correlating (1460 FIG. 14). However Struhsaker et al. teaches the selector selecting a detecting arm to identify the phase based on the correlation function (32-34 drawing is the selector, column 4 lines 8-20 wherein the selector detects arm which is the new reference PN signal, to identify the phase based on the correlation). As Dress, Jr, et al.'s transceiver is spread-spectrum communications, at the time of the invention, it would have been obvious to a person of ordinary

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skill in the art to have the correlation system including the correlation circuit 18 & 20, 32, and the selector/mans 34, taught by Struhsaker et al. in Dress, Jr. et al.'s correlator of the UWB receiver to provide a correlation system which allows for an increase in acquisition rate (column 2 lines 10-15). The combined/modified receiver improves the acquisition rate of the SS wireless communication.

Regarding **claims 2 & 10**, Dress, Jr. et al. discloses the predetermined interval is a distance between the incoming pulses in time (FIG.2, column 1 lines 50-58).

Regarding **claims 3, 11 & 4, 12**, Dress, Jr. et al. discloses one of bi-phase modulated, and quadrature phase modulated, and multilevel pulses (column 14 lines 25-35, column 11 lines 40-45).

Regarding **claims 5 & 13**, Dress, Jr. et al. discloses a phase adjuster to adjust the local pulses (LOCK, CLOCK, 1480-1490 FIG.14, column 12 lines 5-15); and a calculator to calculate a correlation value of the local pulse and the incoming pulse (1460 FIG.14, column 11 line 65-column 12 line 3).

Regarding **claims 6 & 14**, the modified Dress, Jr. et al.'s receiver with the Struhsaker et al.'s teaching has a plurality of the correlation value comprises the correlation function (22, 28 drawing '331).

5. Claims 7, 15 & 20, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dress, Jr. et al. (US 6603818) in view of Struhsaker et al. (US 6128331), as applied to claims 1 & 9 above, and further in view of Sawahashi et al. (US 5768306).

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Regarding **claims 7 & 15**, except explicitly specify the predetermined threshold of the correlator, the combined/modified Dress, Jr. et al.'s architecture with Struhsaker et al.'s correlation system discloses all subject matter: a first calculator to find a first correlation value (28 correlator 1 drawing '331) and a second calculator to find a second correlation values (28 correlator 2 drawing '331); and a comparator to select the detecting arm with a higher correlation value (32-34 drawing, column 4 line 8-20 '331). Further Sawahashi et al. teaches the predetermined threshold in the correlation (47 FIG.4, Abstract, column 4 lines 17-19, column 5 lines 30-40). As Struhsaker et al.'s correlators 20 for the coarse synchronization/acquisition mode, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the sliding correlator with the predetermined threshold taught by Sawahashi et al. in Struhsaker et al.'s correlator to provide a correlator that can establish synchronization quickly (column 3 lines 65-67).

Regarding **claims 20 & 24**, the combined/modified Dress, Jr. et al.'s architecture with Struhsaker et al.'s correlation system and Sawahashi et al.'s sliding correlator discloses a calculator (34 drawing '331) for finding a first correlation value for a first detecting arm that exceeds a predetermined threshold and a second correlation value for a second detection arm that exceeds the predetermined threshold over a phase range beginning with a first phase (column 1 lines 40-48 '306); a detector (34 '331/42 FIG.4 '306) for determining the first phase corresponding to the first correlation value; and a comparator (32 drawing , column 3 line 60-column 4 line 2 '331) for comparing the first correlation value to the second correlation value to select the detecting arm with a higher correlation value.

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6. Claims 8 & 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dress, Jr. et al. (US 6603818) in view of Struhsaker et al. (US 6128331) and Sawahashi et al. (US 5768306), as applied to claims 7 and 15 above, and further in view of Nishimura (US 6493360).

Regarding **claims 8 & 16**, further Nishimura teaches the threshold is based on a desired bit error rate of the incoming signal (FIG.5). As the combined/modified Dress, Jr. et al.'s architecture suggests selecting bit error rate (column 4 line 66-column 5 line 10 '331), at the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the threshold based on a desired bit error rate taught by Nishimura to reduce the noise error detection and signal miss detection by more than one type of thresholds values (column 3 lines 30-35).

7. Claims 18, 22 & 19, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dress, Jr. et al. (US 6603818) in view of Struhsaker et al. (US 6128331), as applied to claims 1 & 9 above, and further in view of Nishimura (US 6493360).

Regarding **claims 18 & 22**, further Nishimura teaches a subtractor to decrease the predetermined threshold (S12-S16 FIG.8, column 11 lines 35-40). As the combined/modified Dress, Jr. et al.'s architecture suggests selecting bit error rate (column 4 line 66-column 5 line 10 '331), at the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the decreasing threshold taught by Nishimura to reduce the noise error detection and signal miss detection by more than one type of thresholds values (column 3 lines 30-35).

Regarding **claims 19 & 23**, inhering limitations of claim 18 and 22 respectively, further Nishimura teaches the threshold is based on a desired bit error rate of the incoming signal (FIG.5). As the combined/modified Dress, Jr. et al.'s architecture suggests selecting bit error rate

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(column 4 line 66-column 5 line 10 '331), at the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the threshold based on a desired bit error rate taught by Nishimura to reduce the noise error detection and signal miss detection by more than one type of thresholds values (column 3 lines 30-35).

8. Claims 21 & 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dress, Jr. et al. (US 6603818) in view of Struhsaker et al. (US 6128331), as applied to claims 20 & 24 above, and further in view of Nishimura (US 6493360).

Regarding **claims 21 & 25**, further Nishimura teaches the threshold is based on a desired bit error rate of the incoming signal (FIG.5). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the threshold based on a desired bit error rate taught by Nishimura to reduce the noise error detection and signal miss detection by more than one type of thresholds values (column 3 lines 30-35).

### *Conclusion*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Chang whose telephone number is 703-305-3416. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang  
June 9, 2004

  
**CHIEH M. FAN**  
**PRIMARY EXAMINER**